

Parrish's invention addresses the problem of removing hazardous nitric oxide from exhaust gas streams of power plants before the gas may be emitted into the environment (line 26, column 1).

In contrast, the instant invention addresses the issue of producing an aqueous biocidal environment.

3. According to MPEP 706.02(j) section D, to establish a *prima facie* case of obviousness there must be some suggestion or motivation, either in the reference themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teaching. However, it is unambiguously not the case when considering the instant application with respect to combining the two technologies described in CS '995 and Parrish; said technologies cannot, under any circumstances, solve the problem which is at the core of the instant invention. Furthermore, there is no apparent motivation for one of ordinary skill in the art to either modify a technology for nitrogen oxide removal from power plants (Parrish) or the technology for removal of heavy metal bounded complexes from wastewater (CS '995) in order to produce an aqueous biocidal environment which is at the heart of the instant invention.

MPEP 706.02(j) section D further states that prior art reference must teach or suggest all the claim limitations. We respectfully submit that the feature of powdered MgO suspended in liquid phase is a limitation not anticipated by prior art, and even in hindsight not perceptible there.

4. The Parrish technique is further distinguishable from the instant method with regard to nearly all their technical characteristics. The preferred embodiment of the instant application relates to the enhanced generation of peroxide radicals in diluted peroxide solutions for applications such as rapid *in situ* treatment of ballast water. The use of Parrish's invention necessitates enriched hydrogen peroxide solution which impinges a surface heated up to 500° C, and such conditions would be impractical and even impossible for the instant applications.

The instant application circumvents potential technical and safety problems associated with the decomposition of hydrogen peroxide at high concentrations and under high temperatures (in Parrish, initial hydrogen peroxide concentration in Example 2 is 50%). Furthermore the instant application provides rapid means for the attaining large scale biocidal effect, for example within from 30 seconds to 5 hours, and preferably from 30 seconds to 100 minutes (claims 13 and 14, page 6).

5. The Examiner relates, in paragraph 2 on page 5, to the phase in which the decomposition of hydrogen peroxide occurs both in Parrish and in the present invention, asserting that according to Parrish's method the decomposition of hydrogen peroxide is in the solution phase when it impinges the heated surface. Regardless of whether the hydrogen peroxide is in solution or gaseous phase when it impinges a surface heated up to 500°C, inevitably hydroxyl radicals will be formed in a gaseous phase in contrast with the instant invention wherein the hydroxyl radicals are in a liquid phase throughout the specified process.

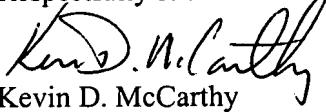
6. The Examiner suggests, at paragraph 4 on page 6, that heat supplied by UV irradiation according to publication CS '995 is comparable with the heat supplied according to Parrish. We have to disagree with this assertion as one having ordinary skill in the art would have recognized that UV irradiation which occurs at ambient temperatures, generating imperceptible heat, can not be compared to Parrish method pumping heat to the system via a surface heated up to 500°C.
7. CS '995 teaches photochemical degradation of complexing agents such as disodium EDTA (page 1, line 1). No radicals are mentioned there, and hydrogen peroxide is not even an essential part of the technique, as seen in Examples 1-3, 5, 6, and 8-10 which do not employ peroxide but attain the desired results.
8. The Examiner asserts that claim 1 is open in regard to the range of temperature values and hydrogen peroxide concentrations (page 5 and 7 of the Examiner letter). Although we disagree with the Examiner's assertions, the claims have been amended rendering them more specific by incorporating the subject matter of original claims 3 and 7 into amended claim 1. In addition, the term "biocidal" was added to claim 1 in order to still further distinguish the subject matter of the instant invention from prior art. Similarly, we do not agree with the Examiner assertion that the consistence of magnesium oxide in claim 1 is open to being suspended on support (last two lines on page 5) because it would have been unambiguously clear to any one having ordinary skill in the art that the catalyst is suspended in a liquid mixture. Nevertheless, we have amended claim 1 by explicitly specifying the character of the MgO dispersal, as supported in the specification.

Conclusion

9. Following our current amendments, one having ordinary skill in the art can now clearly distinguish between our invention which relates to the formation of a biocidal environment and the two other technologies cited by prior art which include removing heavy metal complexes from sewage waters or removing nitric oxide from power plant gases. Furthermore, it is clear that combining the technologies described in CS '995 and in Parrish cannot help in overcoming the problem whose solving is in the core of the instant invention.

The Applicant respectfully submits that, following the amendments of the claims, and in light of the above explanations, the instant application should be held allowable.

Respectfully submitted


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